

What is claimed is:

1. A method of preparing a cured laminate comprising the steps of:
 - a) applying onto a first substrate, a curable clay composition comprising:
 - i) a curable medium comprising at least one ethylenically unsaturated compound selected from the group consisting of ethylenically unsaturated monomer and ethylenically unsaturated oligomer; and
 - ii) from 0.5 to 20 weight %, based on a total weight of said curable clay composition, of exfoliated clay platelets dispersed in said curable medium;
 - b) contacting a second substrate with said curable clay composition to provide an uncured laminate, wherein said curable clay composition is in contact with said first substrate and said second substrate; and
 - c) subjecting said uncured laminate to electron beam radiation to provide said cured laminate.
2. The method according to claim 1 wherein said curable medium further comprises at least one soluble polymer.
3. A method of preparing a coated substrate comprising the steps of:
 - a) preparing an uncured coated substrate by applying onto a substrate, a curable clay composition comprising:
 - i) a curable medium comprising at least one ethylenically unsaturated compound selected from the group consisting of ethylenically unsaturated monomer and ethylenically unsaturated oligomer; and
 - ii) from 0.5 to 20 weight %, based on a total weight of said curable clay composition, of exfoliated clay platelets dispersed in said curable medium; and
 - b) subjecting said uncured coated substrate to electron beam radiation to provide said coated substrate.
4. The method according to claim 2 wherein said curable medium further comprises at least one soluble polymer.

5. A curable clay composition comprising:

- a) a curable medium comprising at least one ethylenically unsaturated compound selected from the group consisting of ethylenically unsaturated monomer and ethylenically unsaturated oligomer; and
- b) from 0.5 to 20 weight %, based on a total weight of said curable clay composition; of exfoliated clay platelets dispersed in said curable medium; wherein said curable clay composition is substantially free of photoinitiator.

6. The curable composition according to claim 5 wherein said curable medium comprises a weight ratio of said ethylenically unsaturated monomer to said ethylenically unsaturated oligomer in the range of 10:1 to 1:2.

7. A curable clay composition comprising:

- a) a curable medium comprising:
 - i) from 40 to 98.5 weight % of at least one ethylenically unsaturated compound selected from the group consisting of ethylenically unsaturated monomer and ethylenically unsaturated oligomer; and
 - ii) from 1 to 40 weight % soluble polymer; and
- b) from 0.5 to 20 weight % exfoliated clay platelets dispersed in said curable medium;

wherein all weight % are based on total weight of said curable clay composition.

8. The curable composition according to claim 7 wherein said curable medium comprises a weight ratio of said ethylenically unsaturated monomer to said ethylenically unsaturated oligomer in the range of 10:1 to 1:2.

9. A method for preparing an curable clay composition comprising exfoliated clay platelets dispersed in a curable medium, comprising the steps of:

- a) providing a first mixture comprising:
 - i) clay particles comprising stacks of clay platelets, and

- ii) said curable medium comprising at least one ethylenically unsaturated compound selected from the group consisting of ethylenically unsaturated monomers and ethylenically unsaturated oligomers; and
- b) processing said first mixture in a moving media mill to separate said clay platelets from said stacks to provide said exfoliated clay platelets dispersed in said curable medium.

10. The method according to claim 9 wherein said curable medium comprises a weight ratio of said ethylenically unsaturated monomer to said ethylenically unsaturated oligomer in the range of 10:1 to 1:2.